

A new protocol to investigate visitors-animals interactions in zoos considering animal welfare, visitors, and conservation education goals.

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Modern zoos offer animal-visitors interaction programs where visitors can learn about animals, understand conservation issues and develop positive feelings about the care and well-being of zoo animals. But in recent years, sensibility is changed and more awareness of the different aspects connected with these experiences has increased. In this study, we designed a protocol investigating animal-visitor interactions from different perspectives, using several tools for analyses: continuous focal animal behavioral observations (prior, during and after interactions), fecal cortisol analysis to investigate animal welfare, questionnaires investigating the feeling of visitors (participating to experiences vs non-participating) to assess educational efficacy, a risk assessment procedure to evaluate visitor and animal welfare and safety and to give indications on how to reduce potential dangers. Data collected throughout these tools are used to fill in an ethical matrix, which provides a rational ethical analysis of all the aspects of the interactions, including all the stakeholders and underlining the potential conflicts of values.

We applied the protocol in two different interactions programs at Zoom biopark in Cumiana (Turin): “turtle experience” where people can interact with three Aldabra giant turtles (*Geochelone gigantea*) and “giraffe feeding” where people can feed four giraffes (*Giraffa camelopardalis antiquorum* and *Giraffa camelopardalis rothschildi*).

The goal of this study is to create a general, easy and comprehensive protocol that considers both animals, visitors, and educational goals. The last step of the protocol, the ethical matrix, can support zoos in performing animal-visitors experiences that are focused on both preserving and enhancing animal and visitor welfare and to convey cognitive and affective educational messages regarding animals and their conservation needs.